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MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) COMPLIANCE AUDIT

MUNICIPALITY OF BAYAMON, PUERTO RICO

FINAL REPORT
PRR040002

Audit Dates:
August 14–15, 2013

Draft Report Date:
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CONTENTS

Section 1.0 Introduction

On August 14–15, 2013, the U.S. Environmental Protection Agency (EPA), Caribbean Environmental Protection Division (CEPD), and an EPA contractor, PG Environmental, LLC (hereinafter, collectively, the EPA Audit Team) conducted an audit of the Municipal Separate Storm Sewer System (MS4) Program of the Municipality of Bayamon, Puerto Rico (Municipality or Bayamon). Discharges from the Municipality's MS4 are regulated under *National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges from Small Municipal Separate Storm Sewer Systems*, Permit No. PRR040000 (hereinafter, the Permit; see Appendix A), effective November 6, 2006. The Permit expired on November 6, 2011, but has been administratively extended. The Municipality submitted a notice of intent (NOI) for coverage under the Permit in February 2007 (NPDES No. PRR040002), and it has been developing its MS4 Program since that time.

Part 4.1.1 of the Permit requires Bayamon to "develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your [Bayamon's] small MS4." Municipality staff explained that Bayamon was operating under its *Small Municipal Storm Water Management Plan (SWMP)*, dated July 2007 (hereinafter, SWMP or Bayamon 2007 SWMP; see Appendix B). Findings in the audit report have been developed based on the requirements of the Permit and Bayamon 2007 SWMP. At the time of the audit, Bayamon was in its seventh year of MS4 program implementation. The best management practice (BMP) implementation schedule (i.e., compliance dates) for program implementation included in the Bayamon 2007 SWMP range from Permit Year 1 (i.e., November 6, 2007) to Permit Year 5 (i.e., through November 6, 2011).

According to the 2010 U.S. Census, the total population of Bayamon is about 208,116 people, and the Municipality encompasses approximately 45 square miles. Bayamon is located in the northern coastal plain region of the Island of Puerto Rico. It is bordered by the municipality of Guaynabo to the east, the municipality of Toa Alta, Naranjito, and Toa Baja to the west, the municipalities of Comerio and Aguas Buenas to the south, and the municipality of Catano to the north.

Municipality staff explained that Bayamon is an autonomous municipality of Puerto Rico and has the authority to develop and implement territorial ordinances.

The Permit authorizes the Municipality to discharge stormwater runoff and certain non-stormwater discharges from the Municipality's small MS4 to waters of the United States. The primary receiving waters for the Municipality are Tio Bayamon, Rio Hondo, and the Rio Culebrinas.

The audit focused on three of the Minimum Control Measures (MCMs) described in Part 4 of the Permit:

- MCM 3 Illicit Discharge Detection and Elimination.
- MCM 4 Construction Site Storm Water Runoff Control.
- MCM 6 Pollution Prevention/Good Housekeeping for Municipal Operations.

The purpose of the audit was to obtain information that will assist EPA in assessing Bayamon's compliance with the requirements of the Permit and associated Bayamon 2007 SWMP, as well as the implementation status of the current MS4 Program. The audit schedule is presented as Appendix C.

The EPA Audit Team obtained information through interviews with representatives from the Municipality, along with a series of site visits, record reviews, and field verification activities. A copy of the sign-in sheets for the opening conference and closing conference of the audit is presented as Appendix D. All referenced documentation used as supporting evidence is provided in Appendix E, the Exhibit Log; photo documentation is provided in Appendix F, the Photograph Log.

The primary representatives involved in the audit were the following:

Municipality of Bayamon MS4 Program Compliance Audit: August 14–15, 2013	
Municipality of Bayamon Representatives:	Rurico Pintado Cruz, Vice Mayor Eileen Poueymirou, Planning Director Edlyn Caban Sosa, Administrative Assistant Roberto Betancourt, O.P.M. Engineer Edimburgo Melendez Rivera, Director Internal Audit Office Christian M. Rivera Figueroa, PE, Official of Permits Wilfredo Flores Rivera, PS, Agrimensor William Sarriera, Consultant, ACE Environmental, Inc. Edgar Vazquez, Consultant, ACE Environmental, Inc. Elvin Roldan, Consultant, ACE Environmental, Inc.
EPA Representatives:	Sergio Bosques, Caribbean Environmental Protection Division
EPA Contractor Representatives:	Max Kuker, PG Environmental, LLC Bobby Jacobsen, PG Environmental, LLC Melba E. Ayala, Translator for PG Environmental, LLC

Dry weather conditions were experienced during the field activities conducted as a component of the audit.

Section 2.0 Information Obtained Regarding Compliance with the Permit

The EPA Audit Team conducted an evaluation of Bayamon's MS4 Program to obtain information that will assist EPA in assessing the Municipality's compliance with the requirements of the Permit.

Prior to the audit, the EPA Audit Team formally requested that Bayamon have specific documentation available for review at the time of the audit. The EPA Audit Team provided Bayamon with a written list of requested records on July 2, 2013 (hereinafter, EPA Records Request; see Appendix E, Exhibit 1). Bayamon provided several documents to the EPA Audit Team before the audit, made multiple documents available during the audit, and also provided the EPA Audit Team with an inventory of those documents (hereinafter, Bayamon Response Inventory; see Appendix E, Exhibit 2). The EPA Records Request and Bayamon Response Inventory are referenced, as applicable, throughout this audit report.

During the audit, the EPA Audit Team obtained documentation and other supporting evidence regarding compliance with the Permit and Bayamon's implementation of the Bayamon 2007 SWMP. Pertinent information obtained during the evaluation is presented in this audit report as audit observations. The presentation of audit observations in this report does not constitute a formal compliance determination or notice of violation, but may identify areas of potential non-compliance. All referenced documentation used as supporting evidence is provided in Appendix E, the Exhibit Log; photo documentation is provided in Appendix F, the Photograph Log.

Table 1 provides a summary of the EPA Audit Team's overall audit observations. Descriptions and details regarding the audit observations, as well as supporting documentation, are provided in the applicable sections of this audit report.

Table 1. Requirements of Bayamon's NPDES Permit (PRR040002) and Observations Identified by the EPA Audit Team

Minimum Control Measures and Permit Requirements	Observations
Illicit Discharge Detection and Elimination Part 4.2.3.1 of the Permit requires Bayamon to "develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined in 40 CFR §122.26(b)(2)) into the permittee small MS4." See section 2.1.1 through section 2.1.6 of the audit report for the specific permit references for each item of potential non-compliance.	1. Bayamon had not verified a complete municipal separate storm sewer system map (Section 2.1.1). 2. Bayamon did not adopt an ordinance to prohibit non-stormwater discharges to the MS4 until May 2013 (Section 2.1.2). 3. Bayamon had not conducted dry weather field screening for non-stormwater flows in accordance with its SWMP (Section 2.1.3). 4. Bayamon had provided training to municipal staff regarding illicit discharge detection and stormwater awareness (Section 2.1.4). 5. Bayamon had prepared and distributed public education documents to the general public (Section 2.1.5). 6. The EPA Audit Team observed multiple illicit discharges to Bayamon's MS4 during the audit (Section 2.1.6). See the referenced sections of the audit report for further discussion of these issues.
Construction Site Storm Water Runoff Control Part 4.2.4.1 of the Permit requires Bayamon to "develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their small MS4 from construction activities that result in land disturbance greater than or equal to one acre." See section 2.2.1 through section 2.2.4 of the audit report for the specific permit references for each item of potential non-compliance.	1. Bayamon had not developed or adopted requirements for erosion and sediment control or to control waste from construction sites until May 2013 (Section 2.2.1). 2. Bayamon had not developed or implemented procedures for conducting and documenting construction site plan review incorporating consideration of water quality impacts (Section 2.2.2). 3. Bayamon had not fully implemented procedures for conducting construction site inspections in accordance with its SWMP (Section 2.2.3). 4. The EPA Audit Team noted deficiencies at construction sites visited during the audit (Section 2.2.4). See the referenced sections of the audit report for further discussion of these issues.
Pollution Prevention and Good Housekeeping for Municipal Operations Part 4.2.6.1.1 of the Permit requires Bayamon to "develop and implement an operation and maintenance program that includes a training component and has an ultimate goal of preventing or reducing pollutant runoff from municipal operations." See section 2.3.1 through section 2.3.3 of the audit report for the specific permit references for each item of potential non-compliance.	1. The EPA Audit Team noted several deficiencies at municipal facilities during site visits conducted as a component of the audit (Section 2.3.1). 2. Bayamon had conducted stormwater awareness training for municipal employees (Section 2.3.2). 3. Bayamon had assessed its municipal facilities to determine the potential for stormwater pollution and had identified facilities for annual inspection (Section 2.3.3). See the referenced sections of the audit report for further discussion of these issues.

Section 2.1 Illicit Discharge Detection and Elimination

Part 4.2.3.1 of the Permit requires Bayamon to "develop, implement, and enforce a program to detect and eliminate illicit discharges (as defined in 40 CFR §122.26(b)(2)) into the permittee small MS4."

2.1.1. Bayamon had not verified a complete municipal separate storm sewer system map.

Part 4.2.3.1.2 of the Permit requires that Bayamon "[d]evelop, if not already completed, a storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls."

Section 5.1.3.2 of the Bayamon 2007 SWMP states that the Municipality will develop a storm sewer system map that shows the location of waterbodies, pollution control devices, conveyance 24 inches or larger in diameter, and discharge points. Section 5.1.3.11 of the Bayamon 2007 SWMP identifies that the storm sewer system map would be completed by the end of Permit Year 2 (i.e., prior to November 6, 2008).

Bayamon's Year Six Annual Report (hereinafter, Annual Report) notes that the Municipality contracted Geomatica de Puerto Rico in 2010 to assist in digitizing historical maps to generate a storm sewer system map for the urbanized areas of the Municipality. The digitization of existing historical maps was completed in summer 2012. The Annual Report states "[t]he digitized maps were verified on the field."

Bayamon's Agrimensor explained that several attributes contained in the storm sewer system map were provided by a federal agency and several Bayamon departments. Specifically, commercial and industrial sources were provided by the United States Patent and Trademark Office in 2011 and annual updates are expected to be obtained in September of each year; local water bodies were provided by the Bayamon Planning Board; and the city grid (map sections) was provided by the Bayamon Planning Department.

Bayamon's Administrative Assistant explained that the locations of mapped storm drain inlets throughout the Municipality had been verified, but, aside from one section of the map (map section No. 43; see Appendix E, Exhibit 3), outfalls had not been verified.

2.1.2. Bayamon did not adopt an ordinance to prohibit non-stormwater discharges to the MS4 until May 2013.

Part 4.2.3.1.3 of the Permit requires Bayamon to "effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the permittee storm sewer system and implement appropriate enforcement procedures."

Section 5.1.3.3 of the Bayamon 2007 SMWP states "[t]hrough ordinances and resolution, the Municipality shall prohibit non-storm water discharges into the storm sewer system and shall develop and implement all procedures and actions required to appropriately enforce these regulations."

Section 5.1.3.11 of the Bayamon 2007 SWMP identifies that the "enforcement ordinances" would begin being drafted during Permit Year 2 and be completed during Permit Year 3 (i.e., prior to November 6, 2009). The SWMP does not identify a date by which the ordinance would be implemented.

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that Bayamon adopted an ordinance to prohibit non-stormwater discharges to the MS4 in May 2013 (hereinafter, IDDE Ordinance; see Appendix E, Exhibit 4).

Bayamon's Environmental Vigilance Division, comprised of five staff and a supervisor, are primarily responsible for the following Permit-related tasks: responding to complaints received by the Municipality and enforcing the IDDE Ordinance. The department's staff, referred to as the "Vigilantes," started to actively participate in the MS4 program during the previous year and will receive additional training to take on more responsibility, such as conducting municipal facility inspections.

2.1.3. Bayamon had not conducted dry weather field screening for non-stormwater flows in accordance with its SWMP.

Part 4.2.3.1.4 of the Permit requires Bayamon to "develop and implement a plan to detect and address non-storm water discharges, including illegal dumping, to the permittees' system." Part 4.2.3.2.4 of the Permit requires Bayamon's plan to detect and address non-stormwater discharges to include "dry weather field screening for non-storm water flows and field tests of selected chemical parameters as indicators of discharge sources."

Section 5.1.3.5 of the Bayamon 2007 SWMP describes that the Municipality will develop a program to detect, identify, and eliminate illicit discharges to the MS4. The SWMP explains that this program will include inspection activities and a measureable goal for these activities is "[i]nventory conducted and sites prioritized for inspection."

Section 5.1.3.11 of the Bayamon 2007 SWMP identifies that the Municipality would "begin surveys for illicit discharge" during Permit Year 2 (i.e., prior to November 6, 2008) and continue the surveys through Permit Years 3 through 5.

According to Municipality staff, in June 2013, Bayamon's Stormwater Consultant (William Sarriera) presented the Municipality with a standard operating procedure (SOP) for the inspection, detection, and elimination of illicit discharges and illicit connections (hereinafter, IDDE SOP; see Appendix E, Exhibit 5). Municipality staff explained that the IDDE SOP contains information about the IDDE Ordinance and includes specific procedures for dry weather screening, complaint response, and enforcement.

Bayamon has identified the main industrial, commercial, and residential areas on the map of its MS4 to help prioritize outfall screening activities. Municipality staff explained that they intend to conduct outfall screening activities in the industrial areas first, then in commercial areas, followed by residential areas.

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (Elvin Roldan) explained that they conducted dry weather outfall inspections and map field verification for one area of the MS4 (i.e., map section No. 43; see Appendix E, Exhibit 3) during August 2013. Based on this effort, the Municipality decided it would be too resource intensive for only municipal staff to conduct these activities throughout the MS4; therefore, at the time of the audit, Bayamon was evaluating the option of establishing a contract with a private company to conduct the work.

During the audit, the EPA Audit Team conducted site visits to multiple outfalls from the Municipality's MS4. Specifically, the EPA Audit Team visited the area along the Rio Hondo where the Municipality had previously conducted outfall screening activities (map section No. 43; see Appendix F, Photograph 1). The site visits occurred more than 24 hours since the last rainfall event in the area. The EPA Audit Team observed the following:

1. The Municipality had assigned unique identifier numbers to each of the outfalls in the area and spray painted the numbers onto the concrete structure above or adjacent to the outfalls (see Appendix F, Photographs 2 and 3).
2. Significant flow was observed from outfall No. 043-007 (see Appendix F, Photographs 4, 5, and 6). Bayamon's Stormwater Consultant (Elvin Roldan) explained that a similar amount of flow was observed discharging from the outfall during the Municipality's screening and verification activity but the source had not been identified. He added that they did not observe indicators of an illicit discharge and suspected it was an underground stream that discharged to the Rio Hondo at that location.
3. A wetted flow pathway was observed from outfall No. 043-011 though it did not appear to be actively discharging at the time of the site visit (see Appendix F, Photographs 7 through 10). Algal growth was observed in the bottom of the outfall pipe but no sewer odors or debris were detected. Bayamon's Stormwater Consultant (Elvin Roldan) stated that a sanitary sewer overflow (SSO) was detected at this outfall during the Municipality's outfall screening and verification activities. He explained that the Municipality worked with the Puerto Rico Aqueduct and Sewer Authority (PRASA) to eliminate the discharge immediately. The SSO occurred from a sanitary sewer system access manhole at the intersection of Calle 1 and Calle 13, approximately 100 feet west of the outfall.

2.1.4. Bayamon had provided training to municipal staff regarding illicit discharge detection and stormwater awareness.

Part 4.2.3.1.5 of the Permit requires Bayamon to "inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste."

Section 5.1.3.4 of the Bayamon 2007 SWMP states that the Municipality will "educate public employees and commercial and industrial property owners on the hazards of improper waste disposal and ways to detect and eliminate illicit discharges."

Section 5.1.3.11 of the Bayamon 2007 SWMP identifies that the Municipality will begin the educational training program in Permit Year 1 (i.e., prior to November 6, 2007) and continue it through Permit Years 2 through 5.

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that recently they provided training to municipal staff about illicit discharges typically seen at the specific types of facilities at which the staff work. For example, Bayamon's Administrative Assistant explained that on July 22, 2013, Bayamon conducted training for the brigade supervisors in the Public Works Department to discuss illicit discharges and pollution prevention for the specific types of work conducted by Public Works Department staff (e.g., road repair, catch basin cleaning). Municipality staff explained that the brigade supervisors are responsible to disseminate information and train their staff on the information provided in the training described above, but there is no formal documentation of this training activity.

Bayamon's Administrative Assistant also stated that the Vigilantes were provided training on the IDDE Ordinance and IDDE SOP in July 2013 and Community Development staff were provided training on the Construction Ordinance and Construction Site Inspection SOP.

Bayamon maintains copies of training sign-in sheets and presentation materials as documentation of the formal training events, but not for the dissemination of information to general staff level employees.

Municipality staff did not discuss educational efforts conducted for commercial and industrial property owners regarding illicit discharges.

2.1.5. Bayamon had prepared and distributed public education documents to the general public.

Part 4.2.3.1.5 of the Permit requires Bayamon to "inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste."

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that extensive public education materials had been developed and distributed to the general public.

Bayamon provided 27 public education documents, including posters, fact sheets, and brochures, covering a variety of topics including vehicle washing, vehicle maintenance, animal waste pickup, etc.

2.1.6. The EPA Audit Team observed multiple illicit discharges to Bayamon's MS4 during the audit.

Part 4.2.3.1.3 of the Permit requires Bayamon to "effectively prohibit, through ordinance, or other regulatory mechanism, non-storm water discharges into the permittee storm sewer system and implement appropriate enforcement procedures."

The EPA Audit Team observed multiple illicit discharges to Bayamon's MS4 during field activities conducted as a component of the audit. Specifically, the EPA Audit Team observed the following:

1. Soapy water from a commercial car washing facility (Extreme Auto Detailing) was entering a storm drain inlet about 100 feet to the north of the intersection of Calle 3 and North Calle Main (see Appendix F, Photographs 11 through 14). After making this observation in the field, Bayamon's Vigilantes Supervisor and the EPA Audit Team discussed the feasibility of Bayamon specifically addressing illicit discharges from commercial washes and providing education to business owners through the business license renewal process.
2. Soapy water from a commercial car washing facility (Mr. Quick's) in the lower level of the Plaza Del Sol parking garage was entering a storm drain inlet in the parking garage (see Appendix F, Photographs 15 and 16). In addition, a 5-gallon bucket containing an unknown oily substance was observed in the vicinity of the storm drain receiving soapy water from the wash facility (see Appendix F, Photographs 15 and 17). After making this observation in the field, Bayamon's Administrative Assistant and the EPA Audit Team continued to discuss the feasibility of Bayamon specifically addressing illicit discharges from commercial washes. Bayamon's Administrative Assistant explained that Bayamon was working on a program to address the illicit discharges resulting from car washing activities. The program was expected to consist mainly of industry specific outreach containing literature on vehicle washing pollution prevention techniques, equipment and materials along with estimated costs. In addition, Bayamon would require the car wash companies to sign an acknowledgement document that they have received and understand the literature.
3. Soapy water from a commercial car washing facility (En Pronto Wash Auto Spa) was entering a storm drain inlet in Plaza Del Sol Parking garage near Oriental Financial (see Appendix F, Photographs 18 through 20).
4. A red-colored liquid was flowing from a pipe in the curb adjacent to a Asian restaurant near the intersection of Calle 24 and PR-167 and entering a nearby storm drain inlet (see Appendix F, Photographs 21 and 22). Bayamon's Vigilantes Supervisor referred the issue to Vigilantes staff who visited the area shortly after the EPA Audit Team observed the discharge. Though the discharge had stopped prior to the time the Vigilantes arrived, they were able to confirm that the liquid came from the restaurant and discuss why this was an issue with restaurant staff.

Section 2.2 Construction Site Storm Water Runoff Control

Part 4.2.4.1 of the Permit requires Bayamon to "develop, implement, and enforce a program to reduce pollutants in any storm water runoff to their small MS4 from construction activities that result in land disturbance greater than or equal to one acre."

As explained by Municipality staff, Bayamon is an autonomous municipality of Puerto Rico and has the authority to develop and implement territorial ordinances. It has been granted the authority (through a delegation agreement) to enforce the regulations of the Puerto Rico Environmental Quality Board (EQB), which include erosion and sediment control regulations.

2.2.1. Bayamon had not developed or adopted requirements for erosion and sediment control or to control waste from construction sites until May 2013.

Part 4.2.4.1.1 of the Permit requires that Bayamon develop and implement "[a]n ordinance or other regulatory mechanism to require erosion and sediment controls, as well as sanctions to ensure compliance, to the extent allowable under State or local law."

Section 5.1.4.2 of the Bayamon 2007 SWMP states the Municipality will "develop ordinances or other regulatory mechanisms to require erosion and sedimentation controls for polluted runoff from construction sites with a land disturbance of greater than or equal to ½ acre as well as the necessary approvals to ensure compliance."

Section 5.1.4.6 of the Bayamon 2007 SWMP identifies that the Municipality would develop its construction stormwater ordinance or other regulatory mechanism during Permit Year 1 (i.e., prior to November 6, 2007) and implement the ordinance in Permit Year 2 (i.e., prior to November 6, 2008). The SWMP further specifies that in Permit Year 5 (i.e., prior to November 6, 2011) the Municipality would "fulfill maximum compliance with the ordinance."

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that the Municipality adopted an ordinance to prevent the discharge of sediment and other construction related pollutants (i.e., solvents, trash, automotive fluids, etc.) to the MS4 in May 2013 (hereinafter, Construction Ordinance; see Appendix E, Exhibit 6). The Construction Ordinance establishes the legal authority to penalize site operators up to $500 per day, issue stop work orders (SWOs) and revoke construction permit coverage for recurring offenders. At the time of the audit, however, Bayamon had not yet taken any formal enforcement actions.

2.2.2. Bayamon had not developed or implemented procedures for conducting and documenting construction site plan review incorporating consideration of potential water quality impacts.

Part 4.2.4.1.4 of the Permit requires Bayamon to develop and implement "procedures for [construction] site plan review which incorporate consideration of potential water quality impacts."

Bayamon's Official of Permits explained that construction site operators are required to obtain construction permits for all construction related projects. He further explained that through its recently adopted ordinance, developers are required to submit a copy of their Erosion and Sediment Control Plan (Plan CES developed for the Oficina de Gerencia de Permisos Consolidated Permit) and stormwater pollution prevention plan (SWPPP; developed for the EPA Construction General Permit) for review and approval by the Municipality.

Prior to May 2013 (effective date of ordinance), Bayamon only requested that permittees submit a copy of the Oficina de Gerencia de Permisos (OGPe) Consolidated Permit; however, the developer was not required to address Bayamon's comments or recommendations in order to start construction.

The EPA Audit Team formally requested "procedures for site plan review considering potential water quality impacts." In response, Bayamon provided a copy a document titled "Procedimiento para la inspeccion de SWPPP y Plan CES para Proyectos de Construccion" (Procedures for the Inspection of SWPPP and Plan CES for Construction Projects) dated June 30, 2013 (hereinafter, Construction Inspection SOP see Appendix E, Exhibit 7). The Construction Inspection SOP does not contain information regarding the site plan review process or requirements.

Bayamon's Official of Permits explained that Bayamon had not received any construction permit applications since the effective date of the ordinance that required such review. The Bayamon Official of Permits explained that public and private projects will undergo the same site plan review process in the future.

2.2.3. Bayamon had not fully implemented procedures for conducting construction site inspections in accordance with its SWMP.

Part 4.2.4.1.6 of the Permit requires Bayamon to develop and implement "procedures for [construction site] inspection and enforcement of control measures."

Section 5.1.4.5 of the Bayamon 2007 SWMP states the Municipality will "develop the procedures for construction site (BMPs) inspections and the enforcement of installed erosion and sediment control measures." Section 5.1.4.6 of the Bayamon 2007 SWMP identifies this task would be completed in Permit Year 2 (i.e., prior to November 6, 2008).

The EPA Audit Team formally requested "procedures for site inspection and enforcement of control measures." In response, Bayamon provided a copy of a document titled "Procedimiento para la inspeccion de SWPPP y Plan CES para Proyectos de Construccion" (Procedures for the Inspection of SWPPP and Plan CES for Construction Projects) dated June 30, 2013 (hereinafter, Construction Inspection SOP; see Appendix E, Exhibit 7). Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that the procedures were adopted on June 30, 2013.

The Construction Inspection SOP states that inspections will be conducted in response to complaints and that SWPPP and Plan CES projects will be inspected at least one time during the duration of the project. The SOP further states that the outcome of the inspection will determine if additional inspections are necessary to the construction project.

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that Bayamon plans to conduct site inspections at each construction site one or two times during the construction permit term, unless a complaint is received or the need for additional follow-up is identified during the initial inspections.

At the time of the audit, the Municipal Permit Office inspectors had conducted a total of four construction site inspections of private projects since the inception of the program.

Public projects are inspected by contract inspectors hired to perform inspections for specific projects required by the OGPE consolidated permit and Construction General Permit.

The EPA Audit Team recommended that Bayamon develop and implement a tracking system for construction site inspections. Bayamon's Administrative Assistant stated that the Municipality was already planning on implementing a tracking system.

The EPA Audit Team recommended that Bayamon review the inspection frequency to ensure that their program implementation reduces pollutants to the MS4.

Furthermore, Bayamon inspectors in the Municipal Permit Office exhibited a need for further training in order to adequately implement the Construction Ordinance and Construction Inspection SOP. Bayamon's Administrative Assistant explained that Municipal Permit Office staff had received training regarding the newly adopted procedures; however, Municipal Permit Office inspectors had not been trained on the proper installation and maintenance requirements of BMPs. The lack of understanding of proper BMP installation and maintenance requirements was exhibited during site visits to multiple construction projects.

2.2.4 The EPA Audit Team noted deficiencies at construction sites visited during the audit.

On August 15, 2013, the EPA Audit Team conducted site visits at one public construction site and two private construction sites within the Municipality as a component of the audit: (1) Boys and Girls Club (Joint Public and Private), (2) Parque 228 (Private), and (3) Hyatt Hotel (Private). The primary purpose of the site visits was to document site conditions and to assess Bayamon's oversight activities for construction sites. Because of their relevance to Bayamon's obligations under its MS4 permit, summary observations pertaining to the construction projects are presented below. All referenced photographs are contained in Appendix F, Photograph Log.

Boys and Girls Club (Public) – Located on Calle Los Millones (PR-861)

The Boys and Girls Club construction project was active at the time of the audit. According to the erosion and sediment control plans the site was 1.53 acres with 1.11 acres of disturbance. Bayamon staff explained that the Boys and Girls Club project was being constructed on Bayamon property by a private contractor. The construction project had coverage under the OGPe Consolidated Permit (No. 2012-PGC-00174) and coverage under the EPA Construction General Permit (PRR12A224). The Project Engineer explained that an inspector hired by the private contractor conducts inspections of the project to satisfy the requirements of the OGPe Consolidated Permit and the EPA Construction General Permit. Bayamon's Administrative Assistant and Stormwater Consultant (William Sarriera) explained that although the contractor conducts inspections, Bayamon inspectors would still conduct oversight inspections in accordance with Bayamon's Construction Inspection SOP. The project consisted of construction of a Boys and Girl Club facility including the installation of a new sidewalk along Calle Los Millones, a parking area, multiple outdoor play areas (i.e., playground, basketball courts, etc.) and several new buildings. Site representatives estimated that construction was initiated in May 2012 and would be complete in January 2014.

During the site visit, the EPA Audit Team observed the following with regard to construction site stormwater runoff control and stormwater drainage:

1. A review of the approved erosion and sediment control plans indicated that the plans contain details or specifications for erosion and sediment controls, but that the plans did not indicate the specific locations that the controls were to be installed (see Appendix E, Exhibit 8).
2. Bayamon had conducted one routine inspection of the project on July 12, 2013 and a copy of the inspection report was provided to the EPA Inspection Team.
3. The construction entrance at the northwest corner of the project leading to Calle Los Millones, near the intersection of Calle El Resbalon, was observed to be compacted and sediment was noted in the curb and gutter in the vicinity of the entrance (see Appendix F, Photographs 23 and 26).
4. Staining, reportedly from a release of coolant from a skid-steer loader, was observed near the construction entrance to Calle Los Millones. An unlabeled tote was stored without secondary containment adjacent to the staining (see Appendix F, Photograph 24).
5. Improperly installed (e.g., not entrenched into the ground) and maintained (e.g., deteriorated) silt fence was present, in addition to trash, sediment and debris along the length of the project. These deficiencies were noted in the roadway and on the interior of the site along Calle Los Millones (see Appendix F, Photographs 25 through 28, and 40 through 42).
6. Stormwater wattles were installed in several locations to provide additional protection; however, gaps between the wattles were observed in several areas (see Appendix F, Photograph 29).
7. Improperly installed silt fence (e.g., not entrenched into the ground) surrounded by improperly installed stormwater wattles (e.g., gaps) were noted on storm drain

structures within the site boundaries (see Appendix F, Photographs 30, 31, 36 and 37).

8. General trash and debris, concrete mixing equipment, and concrete residue and washout were observed throughout an area on the south side of the construction site located approximately 150 feet from southeastern construction entrance from Calle D (see Appendix F, Photographs 33 through 35).
9. Sediment was observed on Calle D along the fence line of the project, presumably due to the improper installation of silt fence and wattles along the fence line (see Appendix F, Photograph 38).
10. The construction entrance in the southeast corner of the site from Calle D was not properly stabilized (see Appendix F, Photograph 39).
11. The Bayamon inspector's report for the inspection that occurred on July 12, 2013 indicated that no issues were noted during the site visit (see Appendix E, Exhibit 9).

Parque 228 Construction Project – Located near the Intersection of State Road PR-167 and State Road PR-2.

The Parque 228 Construction Project was active at the time of the audit and appeared to disturb an area greater than one acre. Phase I of the project was complete and construction was underway in Phase II. The construction project had coverage under the OGPe Consolidated Permit (Permit No. was not recorded) and coverage under the EPA Construction General Permit (Permit No. PRR12A157) at the time of the audit. The construction project consisted of the redevelopment of an urban area for the construction of a new apartment complex. The redevelopment project also consisted of the widening and repaving of Dr. Veve Street from New Avenue to State Road PR 167 located to the north of the project. Site representatives estimated that construction of Phase II would be complete by April 2014.

During the site visit, the EPA Audit Team observed the following with regard to construction site stormwater runoff control and stormwater drainage:

1. A review of the approved erosion and sediment control plans indicated that the plans contain details or specifications for erosion and sediment controls, but that the plans did not indicate the specific locations that the controls were to be installed (see Appendix E, Exhibit 10).
2. Trackout and tire wash runoff was observed in the roadway along Dr. Veve Street adjacent to the construction site entrance (see Appendix F, Photographs 44 through 47).
3. Silt fence was not properly entrenched along the western perimeter of the site along Dr. Veve Street (see Appendix F, Photograph 48).
4. A plastic jug and 5-gallon fuel container were observed on the sidewalk along Dr. Veve Street to the east of the construction entrance (see Appendix F, Photograph 49).

5. Sediment and erosion controls were not observed in or around storm drain inlets along Dr. Veve Street (see Appendix F, Photograph 50). Sediment was present in at least one storm drain inlet (see Appendix F, Photograph 51).
6. Construction related trash, debris and concrete residue were noted throughout the construction site (see Appendix F, Photographs 52 through 55).
7. Material stockpiles were noted throughout the project without protective erosion and sediment controls, resulting in sediment in numerous storm drain inlets (see Appendix F, Photographs 55 through 57).
8. Silt fence BMPs were not properly installed in multiple locations at the construction site. Specifically, silt fence installed around storm drain inlets throughout the site was not entrenched into the ground (see Appendix F, Photographs 58 through 64). In addition, sediment was observed in several storm drain inlets where the erosion and sediment control plans called for hay stacks to be placed around storm drain inlets rather than silt fence (see Appendix E, Exhibit 10).
9. Silt fence BMPs were not properly installed (e.g., not entrenched) along the eastern perimeter of the site (for example, see Appendix F, Photograph 65).
10. The Bayamon inspector's report for the inspection that occurred on August 9, 2013 (six days prior to EPA Audit Team's site visit) indicated that many of the issues noted during the site visit had been previously identified (see Appendix E, Exhibit 11); however, the issues had not yet been corrected.

Hotel Hyatt Construction Project – Located near the Intersection of State Road PR-167 Plaza Del Sol Mall.

The Hotel Hyatt Construction Project was active at the time of the audit and appeared to disturb an area greater than one acre. The construction project had coverage under the OGPe Consolidated Permit (Permit No. PGC 2012-012421) and coverage under the EPA Construction General Permit (Permit No. PRR12A004) at the time of the audit. The construction project consisted of the construction of a Hyatt Hotel and casino. Site representatives estimated that construction would be complete by early 2014. Due to the size of the erosion and sediment control plans provided to Bayamon by the contractor, the EPA Audit Team was not able to obtain a copy of the plan.

1. A review of the approved erosion and sediment control plans indicated that the plans contain details or specifications for erosion and sediment controls, but that the plans did not indicate the specific locations that the controls were to be installed.
2. Evidence of the migration of sediment was observed in the roadway along PR-167 adjacent to the construction site entrance (see Appendix F, Photographs 66 through 69).
3. Silt fence was improperly installed (e.g., not entrenched) along the fence line near the construction entrance from PR-167. Note that sediment and sediment laden water was observed outside the fence line (see Appendix F, Photographs 70 through 73).

4. Silt fence was improperly installed (e.g., not entrenched and ends not wrapped) around several new storm drain inlets throughout the site resulting in sediment in the bottom of the storm drain inlets (see Appendix F, Photographs 74 through 78).
5. A small length of silt fence was observed to the south of the construction entrance along PR-167; however, perimeter controls (e.g., silt fence) were not in place along most of the fenceline with PR-167 (see Appendix F, Photographs 79 through 82). Sediment was observed in the curb and gutter along PR-167 (see Appendix F, Photograph 83).
6. Staining was observed near the northern perimeter of the building (see Appendix F, Photograph 84).
7. Construction related trash and debris were noted throughout the site (see Appendix F, Photographs 85 through 87).
8. Perimeter controls (e.g., silt fence) were not in place along the northern most entrance to Plaza Del Sol located immediately to the south of the site, and sediment was noted at the Plaza Del Sol entrance near a trench drain (see Appendix F, Photographs 88 through 90).
9. Sediment was noted on a paved construction entrance located adjacent to the northern most entrance to Plaza Del Sol. Sediment tracking was present at the northernmost entrance to Plaza Del Sol, and sediment and debris were observed inside two storm drains located in the area (see Appendix F, Photographs 91 through 95).
10. The Bayamon inspector's report for the inspection that occurred on August 9, 2013 (six days prior to EPA Inspection Team site visit) indicated that many of the issues noted during the site visit had been previously identified (see Appendix E, Exhibit 12); however, the issues had not yet been corrected.

Section 2.3 Pollution Prevention and Good Housekeeping for Municipal Operations

Part 4.2.6.1.1 of the Permit requires Bayamon to "develop and implement an operation and maintenance program that includes a training component and has an ultimate goal of preventing or reducing pollutant runoff from municipal operations."

2.3.1. The EPA Audit Team noted several deficiencies at municipal facilities during site visits conducted as a component of the audit.

On August 14–15, 2013, the EPA Audit Team conducted site visits at several municipally owned properties and facilities. The purposes of the site visits was to document site conditions and to assess Bayamon's oversight activities for municipal operations and maintenance. The EPA Audit Team visited Bayamon's Municipal Operations Complex, which includes the Bayamon Transportation Department Facility, Public Works Facility, Vegetation Management Facility, and several additional areas. In addition, the EPA Audit Team visited a privately operated metal recycling facility that is located on municipally owned property. Because of their relevance to Bayamon's obligations under its MS4 permit, summary observations pertaining to the Transportation Department Facility, Vegetation Management Facility, and Metal Recycling Facility site visits are presented below. All referenced photographs are contained in Appendix F, Photograph Log.

Bayamon Transportation Department Facility – Located at the Municipal Operations Complex East of the Intersection of Avenida Minillas (831) and Calle 5; Bayamon, Puerto Rico

The Bayamon Transportation Department Facility, owned and operated by Bayamon, is used for various activities associated with Bayamon's roadways and MS4, including the following: (1) vehicle and equipment storage, (2) routine vehicle and equipment maintenance (e.g., brake maintenance, fluid changes), (3) material storage, (4) storage of decommissioned vehicles, and (5) vehicle and equipment fueling.

The facility was covered under EPA's Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP) and had a stormwater pollution prevention plan (SWPPP), dated July 2013. Bayamon's Transportation Director explained that he received stormwater training from the Municipality on two occasions, the most recent training regarding the facility's SWPPP in July 2013.

The EPA Audit Team observed the following with regard to pollution prevention and good housekeeping at the Bayamon Transportation Department Facility:

1. Multiple stormwater pollution prevention BMPs had been implemented at facility. For example:
    a. The bulk oil and fuel storage area was covered and had secondary containment structures with locked drainage valves (see Appendix F, Photographs 96 and 97).

   b. New signs regarding pollution prevention which were highly visible and legible had been installed in various areas of the facility (see Appendix F, Photographs 98 and 99).
   c. Drip pans had been placed underneath several leaky vehicles and pieces of equipment (see Appendix F, Photograph 100).
   d. Spill kits were available at the facility (see Appendix F, Photograph 101).
   e. The facility had clearly labeled containers for regular trash and oily waste (see Appendix F, Photograph 102).
2. A disturbed area and accumulated sediment was present upgradient and adjacent to a storm drain inlet which was surrounded by hay bales near the central portion of the facility (see Appendix F, Photographs 103 and 104). Bayamon's Transportation Director stated the Municipality was planning on paving the disturbed area during the week following the audit.
3. The equipment maintenance and washing area in the northern portion of the facility had a trench drain system for waste oil and wash water, that is conveyed to a sump and then transferred to aboveground storage tanks via a float level-activated pump (see Appendix F, Photographs 105 through 109). Oily liquid was present in the open holes of the cinder block wall that surrounds the sump (see Appendix F, Photographs 110 and 111).
   a. Bayamon's Transportation Director explained that the aboveground storage tanks are pumped out by Oil Energy Systems as free service when needed by the facility, or when the company is in the area. The facility had six waste manifests for occasions where Oil Energy Systems removed the oily waste fluids during 2013.
4. Trash and debris was present on and adjacent to a storm drain inlet near the vehicle washing area in the northern portion of the facility (see Appendix F, Photograph 112).

Bayamon Vegetation Management Facility – Located at the Municipal Operations Complex East of the Intersection of Avenida Minillas (831) and Calle 5; Bayamon, Puerto Rico

According to Municipal staff and their consultants, the Vegetation Management Facility is used as a location to process and store landscaping materials, such as woody debris, that cannot be disposed of at a landfill. Citizens can drop off materials at this facility during operating hours. The Vegetation Management Facility did not have a SWPPP.

The facility includes a collection area where trash materials are removed from the landscaping materials and stored for subsequent disposal at a landfill. Bayamon staff explained that an improved trash collection and storage area was under construction in the southern portion of Bayamon's Vegetation Management Facility at the time of the site visit.

The EPA Audit Team observed the following with regard to pollution prevention, good housekeeping, erosion and sediment control, and drainage at the Bayamon Vegetation Management Facility:

1. Containment BMPs had not been implemented along the northern perimeter of the vegetative debris stockpile which appeared to be adjacent to a wetland (see Appendix F, Photographs 113 and 114).
2. The entrance to the vegetative debris stockpile area was not stabilized and sediment had been transported by vehicle tracking to other parts of the Municipal Operations Complex (see Appendix F, Photographs 115 and 116). In addition, the disturbed entrance area was adjacent to a drainage channel and did not have BMPs for erosion or sediment control (see Appendix F, Photograph 117).
3. BMPs for erosion and sediment control had not been implemented for the disturbed active construction area in the southern portion of the facility (see Appendix F, Photographs 118, 119, and 120).
4. Silt fence had been installed around a drainage channel and culvert about 300 feet to the north of the new trash collection and storage area, but it was not entrenched into the ground to retain sediment or prevent failure (see Appendix F, Photographs 121, 122, and 123). Accumulated sediment was observed near the upgradient end of the culvert and sediment-laden water was observed at the downgradient end of the culvert (see Appendix F, Photographs 124 and 125).
5. Concrete waste was observed on the ground in several locations throughout the construction site (see Appendix F, Photographs 126 and 127).
6. Bayamon staff present for the site visit were unsure of the exact area disturbed by the project and whether Bayamon had obtained coverage under OGPe's Consolidated Permit or EPA's Construction General Permit.

Metal Recycling Facility – Located at Road #2 KM 7.7, Corujo Industrial Park, Lot # 22; Bayamon, Puerto Rico

Municipality staff explained that the property is owned by Bayamon, but a private company, Schnitzer Puerto Rico, operates the facility. The facility was covered under the EPA Multi Sector General Permit (PRR 05BP18). The Municipality had not conducted a site inspection of this facility to assess potential pollutant sources and contribution to stormwater runoff. The facility mechanic walked through the facility with the EPA Audit Team and Municipality staff.

The EPA Audit Team observed the following with regard to pollution prevention and good housekeeping at the Metal Recycling Facility:

1. There were significant potential pollutant sources located on the interior of the site (see Appendix F, Photographs 128, 129, and 130).
2. The storm drain inlets along the facility perimeters were covered with steel plates, with the exception of a trench drain at the facility entrance (see Appendix F, Photographs 131 through 134). The facility mechanic explained that the trench drain at the entrance has filter fabric installed within it, and the filter fabric is changed periodically. Accumulated sediment, trash, and debris were observed within and adjacent to the trench drain (see Appendix F, Photograph 135).
3. The facility mechanic explained that the facility was equipped with underground devices to remove pollutants from stormwater runoff prior to discharge. He added

that all storm drain inlets onsite are routed to these multi-chambered underground devices designed to remove sediment, heavy metals, and oil and grease (see Appendix F, Photograph 136). The facility mechanic stated that stormwater runoff sampling for MSGP compliance is conducted downgradient of the treatment units, but upgradient of the discharge location to the MS4.

2.3.2. Bayamon had conducted stormwater awareness training for municipal employees.

Part 4.2.6.1 of the Permit requires Bayamon to develop and implement "an operation and maintenance program that includes a training component. . . . the program must include employee training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance."

Section 5.1.6 of the Bayamon 2007 SWMP states the Municipality will "focus on developing, implementing and enforcing an operations and maintenance program that will reduce or eliminate the impacts of storm water pollution from open-space maintenance, snow disposal, vehicle and building maintenance, land disturbances, and storm sewer system maintenance during the permit term throughout the community."

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that recently they provided training to municipal staff regarding a variety of topics related to operation and maintenance activities. Specifically, in March, June and July 2013 multiple municipal departments were trained on issues specific to their activities. For example and as previously described, Bayamon's Administrative Assistant explained that on July 22, 2013, Bayamon conducted training for the brigade supervisors in the Public Works Department to discuss illicit discharges and pollution prevention for the specific types of work conducted by Public Works Department staff (e.g., road repair, catch basin cleaning). Municipality staff explained that the brigade supervisors are responsible for disseminating information and train their staff on the information provided in the training described above, but there is no formal documentation of this training activity.

Bayamon's Administrative Assistant also stated that the Vigilantes were provided training on the IDDE Ordinance and IDDE SOP in July 2013. The Vigilantes had not yet been provided specific training on how to conduct and document inspections of municipal facilities.

Bayamon provided copies of training sign-in sheets and presentation materials as documentation of the training events.

2.3.3. Bayamon had assessed its municipal facilities to determine the potential for stormwater pollution and had identified facilities for annual inspection.

Part 4.2.6.2 of the Permit requires Bayamon to document its decision process for the development of a pollution prevention/good housekeeping program for municipal operations. The Permit further specifies that the program must include a list of municipal

operations impacted by the Municipality's operation and maintenance program and identify long-term inspection procedures to reduce pollutants to the MS4.

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that Bayamon had developed a list of 24 properties within the urbanized area of the municipality. The list was developed by a state property entity and provided to the municipality as a GIS layer annually. They further stated that they had conducted a review of the list to identify and categorize the municipally-owned facilities for inspection, as the list also included federal and state properties within their jurisdiction.

Bayamon's Administrative Assistant and Bayamon's Stormwater Consultant (William Sarriera) explained that the municipality initiated municipal facility inspections in 2011. They further explained that the inspections were expected to be conducted annually from that point forward.

The EPA Audit Team formally requested "Records of municipal facility inspections conducted for stormwater purposes (most recent Reporting Year)" and in response, Bayamon provided documentation for the 2012 annual inspections.

Section 2.4 Assessment of Storm Water Management Program Plan

Part 4.1.1 of the Permit requires Bayamon to "develop, implement, and enforce a storm water management program designed to reduce the discharge of pollutants from your [Bayamon's] small MS4 . . . ." Subsequent to the audit, CEPD staff conducted a review of the Bayamon 2007 SWMP. The observations regarding the Bayamon 2007 SWMP are included as Appendix G. The issues outlined in Appendix G should be addressed by the Municipality to ensure effective implementation of its storm water management program.